What do you remember about the last session?

When is the shortest day/longest day?

What is the technical name for these?

What happens to the length of day from the end of December to the end of June? What happens to the time of sunrise and sunset?

What happens to the length of day from the end of June until the end of December? What happens to the time of sunset and sunrise?

December 21st in the Northern Hemisphere is the day with the least amount of sunlight with 7 hours and 27 minutes. This is called the winter solstice. From December 21st the amount of daily sunlight increase. Sunrise gets earlier and sunset gets later, this increasing the number of hours and minutes the day of sunlight. This continues until June 21st, the summer solstice, which is the day with the greatest amount of sunlight, 17 hours and 3 minutes. From this date, the time of sunrise get later and the time of sunset gets earlier, meaning the amount of sunlight reduces. This continues until December 21st.

L.O. Understand how the Earth's orbit around the Sun affects hours of daylight and seasons.

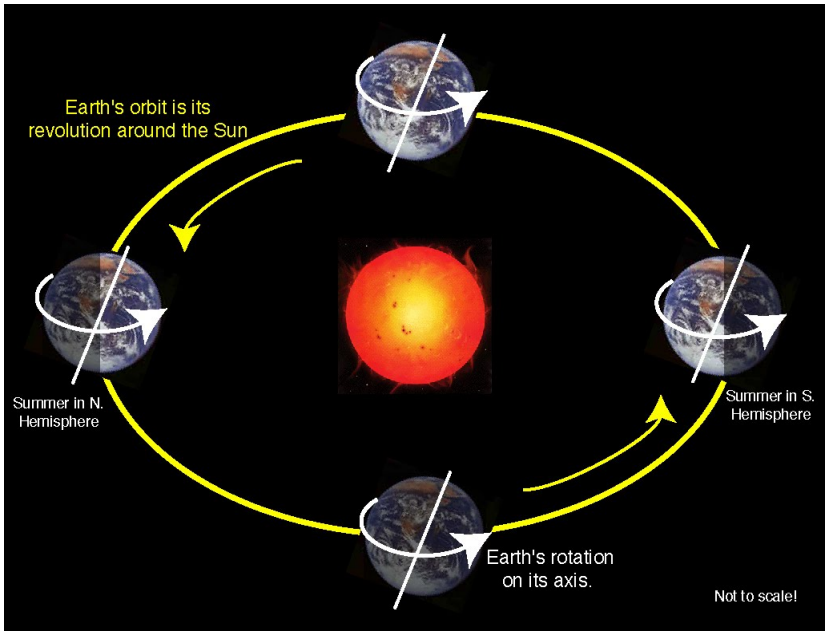
I use data and graphs to describe **simple** patterns in the way Earth's day length changes *		
I use data and graphs to describe patterns and trends in the way Earth's day length changes **		
I use data and graphs to describe **changing** patterns and trends in day length ***		

So what actually *causes* all these changes?

What do ***you*** think?

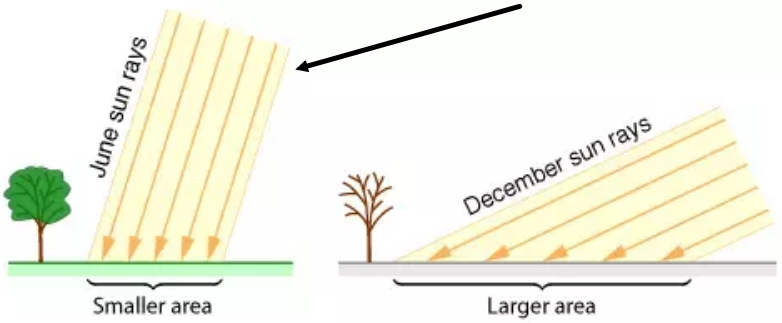
The seasons are actually caused by the way our planet is tilted on its axis, so that different parts of the Earth are pointing towards the Sun at different times of the year as we travel on our orbit. The Earth doesn't wobble as it orbits the Sun - it always stays tilted at the same angle.

Northern hemisphere tilted **towards** the Sun (summer)



Northern hemisphere tilted **away** from the Sun (winter)

During our summer (in the Northern Hemisphere), we are tilted towards the sun, so the sun appears higher in the sky, which means that the sun's rays hit the Earth **more directly**.

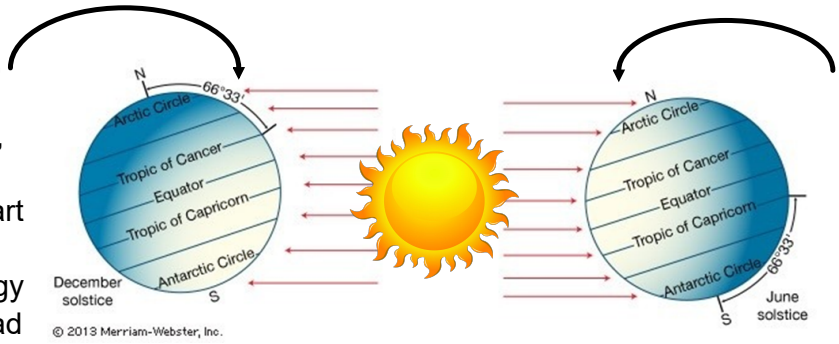


In winter, when we tilt away from the sun, the sun is much lower in the sky, the shadows are longer and the sun's rays hit the ground over a wider area.

http://www.magicofphysics.com/flashes/detail/96/Seasons_and_Ecliptic_Simulator.html

This is exactly what is happening to the sunlight when it hits our part of the Earth at different times of the year.

In the Winter, we tilt away from the Sun, so the light 'skims' our part of the World and the energy is more spread out.



When we (in the Northern Hemisphere) are tilted **towards** the sun, the light hits the Earth more directly, so all the energy of the sun's rays heat up our part of the World more intensely, so we experience our Summer.

Here's a recap:

https://www.youtube.com/watch?v=Pgq0LThW7QA

Can ***you*** explain why we have the seasons?

tilt	axis	orbit	Earth
year	sunrise		sunset
towards	away		Southern

<u>Why do we get seasons?</u>

In the Summer, the Sun appears to...

However, in the Winter...

The changes in the seasons are caused by...

In the Summer, Northern hemisphere is tilted...